

The purpose is . . .

Getting to the Point

Narrow Your Topic



1. List the relationships that are found within the topic area.

For example, in the area of plants there are the relationships between plants and water, plants and sunlight, plants and fertilizer, and plants and temperature. All of these relationships are testable because one affects the other.

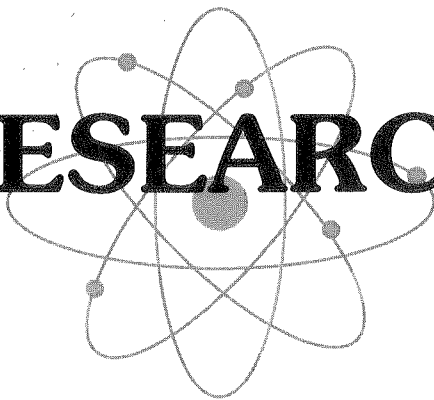
2. After you have established a relationship for the topic, ask a question about the relationship. The question should point out a **cause and effect**, which will be the purpose of your experiment.

For example, if the relationship between plants and fertilizers is chosen, this question could be asked, Will fertilizer "x" or "y" cause petunias to grow taller?

Here is a sample chart of topics, topic relationships, and questions.

Topics	Topic Relationships	Questions
Plants	plants and fertilizers	Will fertilizer "x" or "y" cause petunias to grow taller?
Weather temperature	weather temperature and insulation	Can insulation cause an ice cube to melt at a slower rate?
Friction	friction and rolling	Can surface texture cause a change in my skateboard speed?

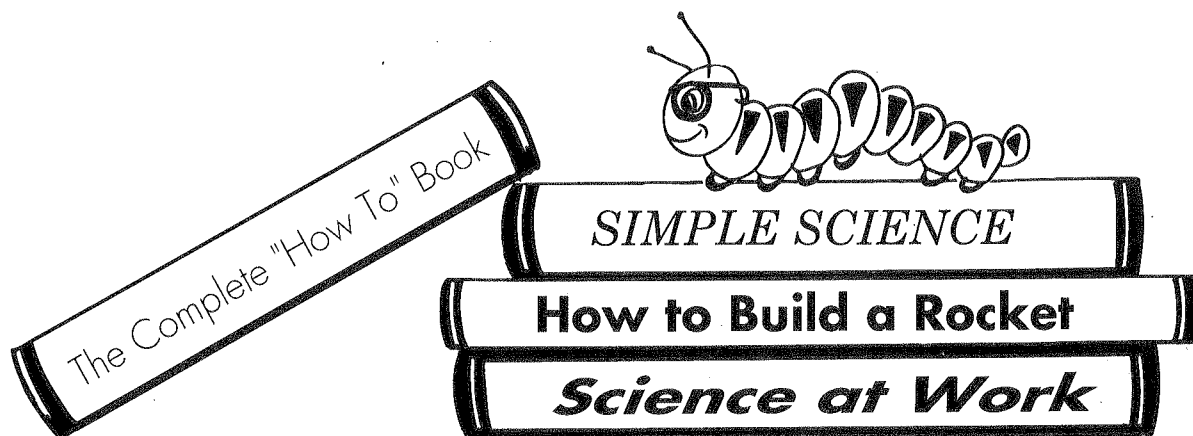
RESEARCH



Now it's time to find out as much about your topic as you can. This will help you decide what you think the answer to your question might be.

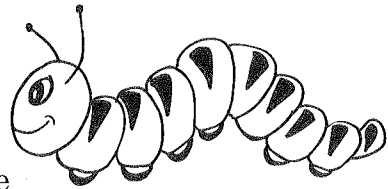
SOURCES OF INFORMATION

Places	People	Literature
school	teacher	science books
library	librarian	project books
home	family/friends	encyclopedias
businesses	doctor/dentist	magazines
garden center	veterinarian	newspapers
zoo	scientist	yellow pages



Identify the Variables

Before you can begin your research, you need to identify the variables in your question. Both variables, the **independent** and the **dependent**, need to be researched.



Remember, the **cause** is the **independent variable** and the **effect** is the **dependent variable**.

Here are some samples:

Will fertilizer "x" or "y" cause petunias to grow taller?
independent variable: fertilizers "x" and "y"
dependent variable: growth of petunias

Can insulation cause an ice cube to melt at a slower rate?
independent variable: insulation
dependent variable: rate at which an ice cube melts

Can surface texture cause a change in skateboard speed?
independent variable: surface texture
dependent variable: skateboard speed

Restate your question from page 8 and identify the variables.

independent variable: _____

dependent variable: _____